



# Jet corrections meeting

<http://www-cdf.lbl.gov/~currat/talks/>

**Charles Currat**  
LBNL

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- ❖ Correction for time dependence in the plug calorimeters:  
evaluation of Beate & Howard prescription



## The patch



- ❖ Function skeleton in development tree: trivial correction  
 $PEM \times 1.0, PHA \times 1.0$
- ❖ Effective patch can be found in Beate's area:
  - `CalorObjects/src/getPlugGainCorrections.cc`
  - `CalorObjects/CalorObjects/getPlugGainCorrections.hh`
  - called in `CalorObjects/src/Calib.cc`, returns multiplicative factor
- ❖ based on laser runs in plug, tower-by-tower, provided by Howard
- ❖ 109 files covering run 134898 (Dec'01) to 153333 (Oct'02)
  
- ❖ Quick & dirty check: apply the (tower) correction as is at jet level according to jet's 4-vector (no reclustering, no reprocessing)
- ❖ Still using my (independent) gjet03 ntuples on period Feb'02–Jun'02 (shutdown)

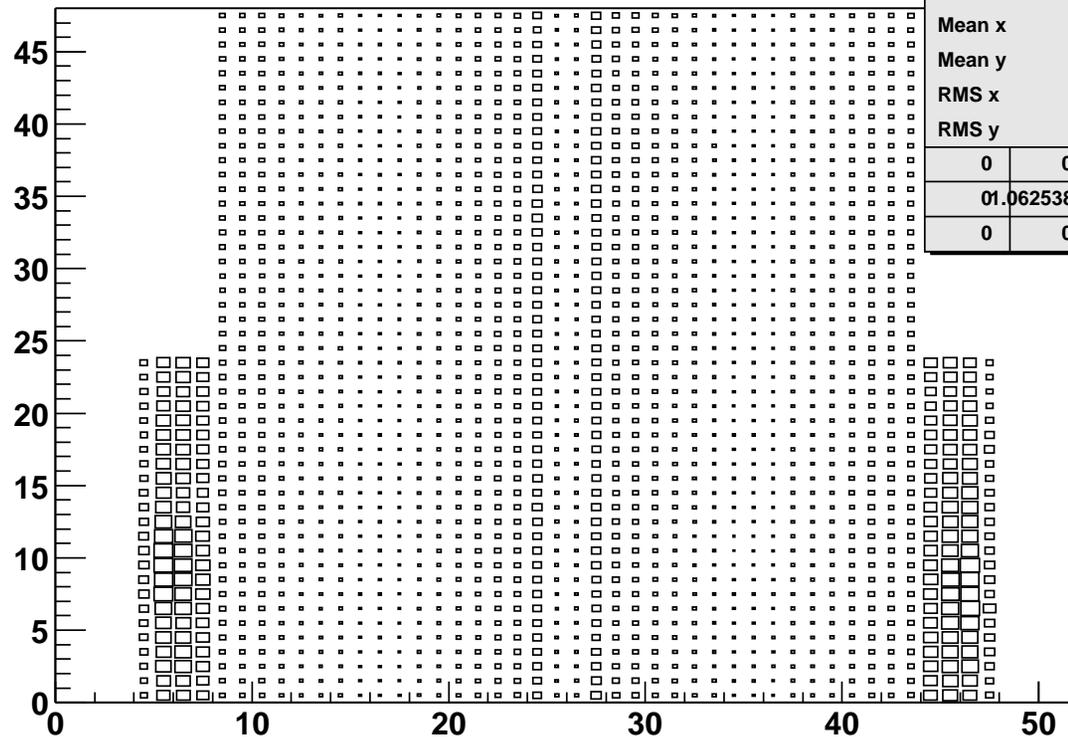




## Correction of the patch

- ❖ Proper initialization of arrays
- ❖ Correction of hardware indices to (ieta, iphi) indices
- ❖ Enormous gain in execution time if lookup table not reloaded from files for each event (i.e. just remember what last run # was)

index map



hidxmap		
Entries	1.062538e+07	
Mean x	25.58	
Mean y	20.42	
RMS x	13.34	
RMS y	13.57	
0	0	0
01.062538e+07	0	0
0	0	0



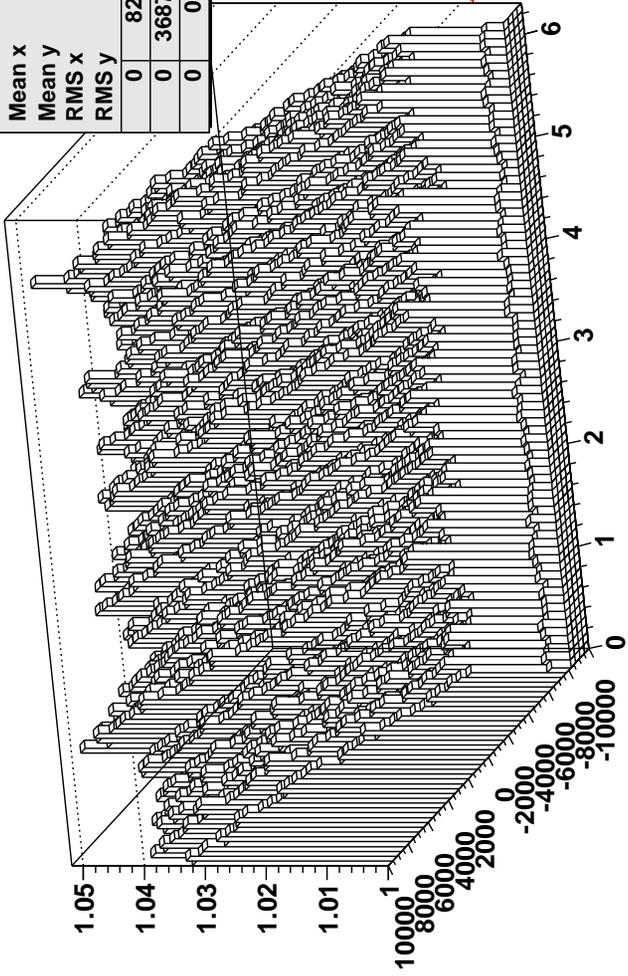
# Correction of the patch



tdep corr func

versus jet  $\phi$

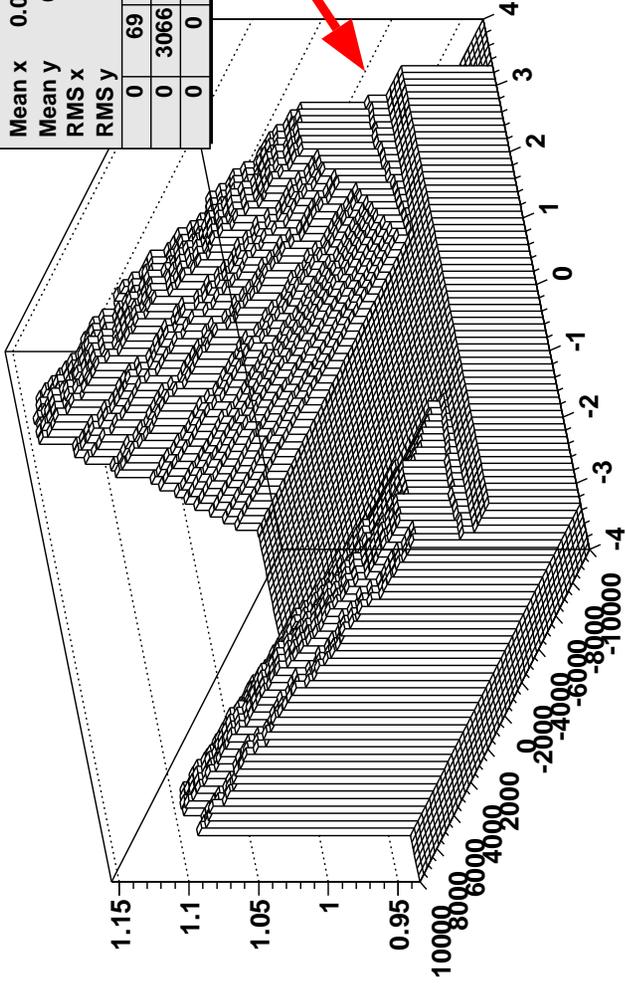
hcofunc2	
Entries	3854
Mean x	3.149
Mean y	51.9
RMS x	1.818
RMS y	5764
	0 82 0
	0 3687 0
	0 0 0



tdep corr func

versus jet  $\eta$

hcofunc	
Entries	3854
Mean x	0.01465
Mean y	69.89
RMS x	1.93
RMS y	5762
	0 69 0
	0 3066 0
	0 0 0

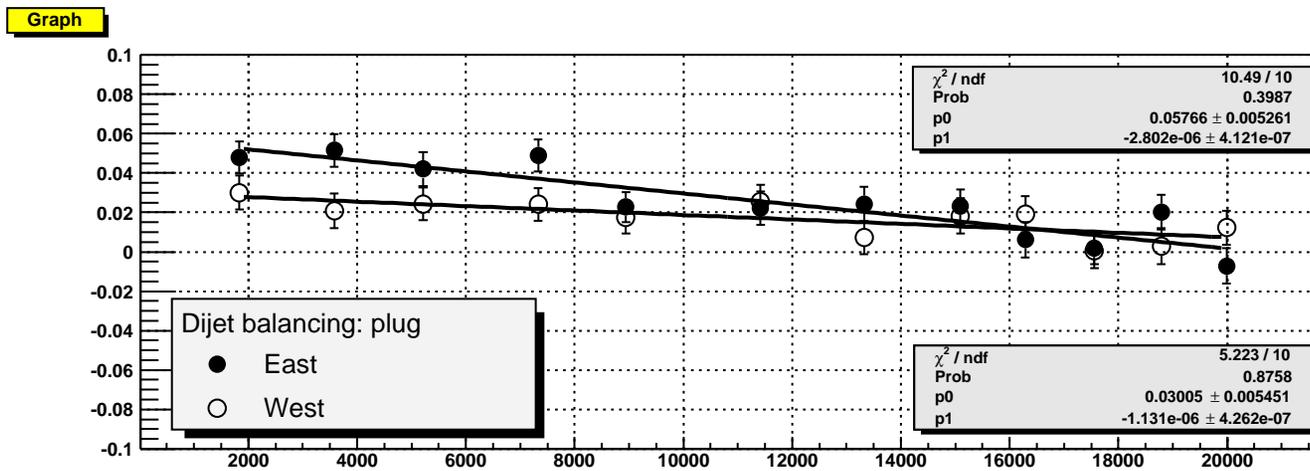
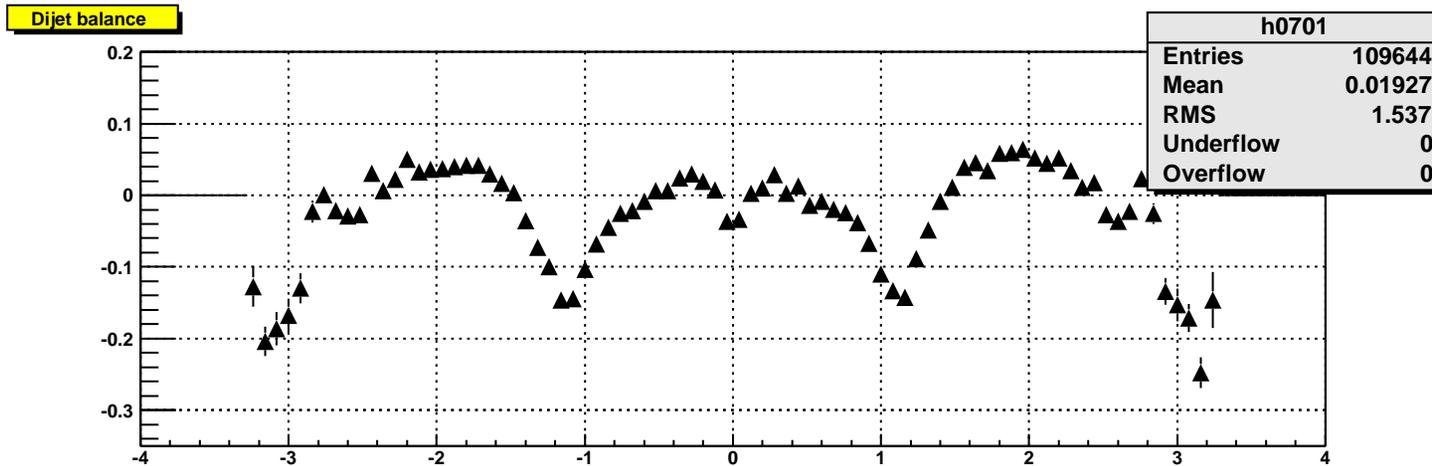


👉 Discontinuity (kind of) at the beginning: runs covered by first file (134898–139524)



# Dijet balance — uncorrected

Reminder. Already shown a couple of times.

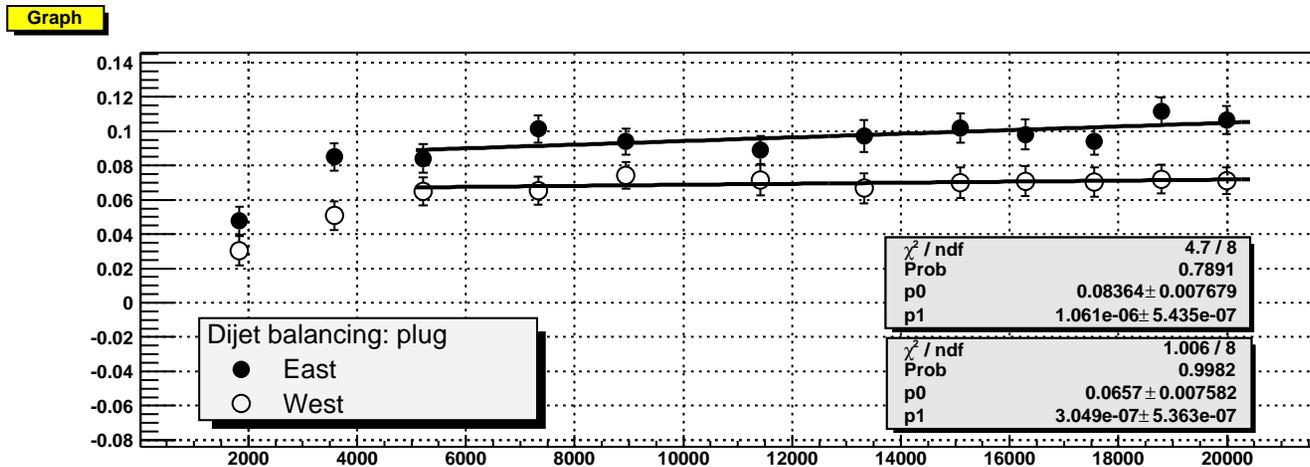
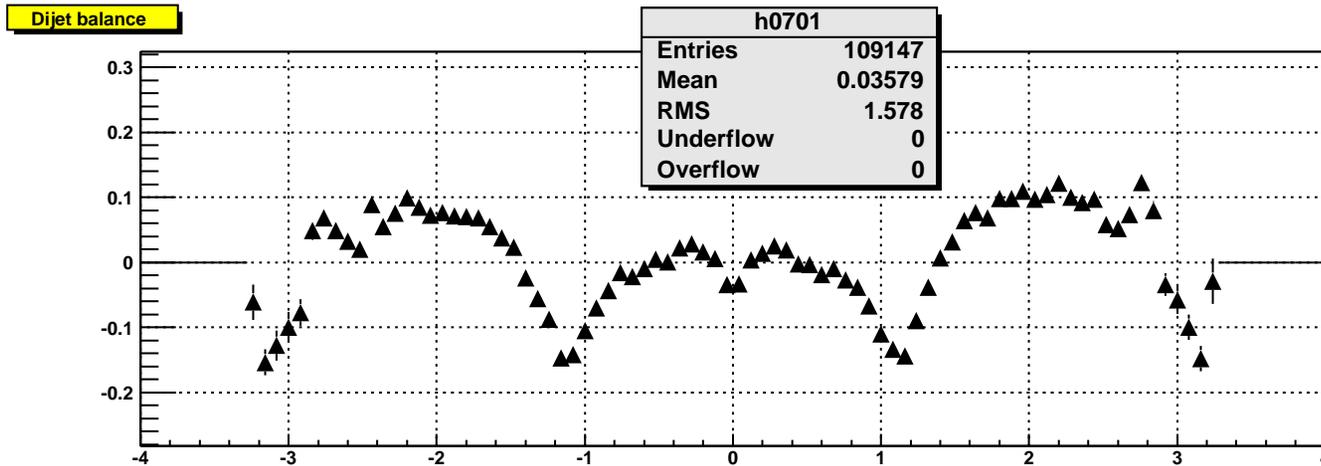


➡ Significant slopes



# Dijet balance — corrected

Discontinuity confirmed ... affecting 2 first points  $\Rightarrow$  discarded



$\Rightarrow$  Time dependence pretty much flattened out



## Coming next



- ❖ First order check on gjet03 data ... OK
- ❖ Patch is now viable, ready for further testing (let me send the correction around)
- ❖ Working on the up-to-date STntuples produced with v. 4.9.1 (Anwar's) — these ones include the 4% CHA correction
- ❖ Run range 134898–139524 does need correction but laser prescription not significant at all here  $O(10^{-5})$  ...